R E P O R T R E S U M E S

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RENOVATE AND MODERNIZE OR ABANDON AND BUILD. A SUMMARY OF AN ILLUSTRATED TALK GIVEN BY WILLIAM L. ENSIGN OF MCLEOD, FERRARA AND ENSIGN, ARCHITECTS, AT THE AASA CONVENTION IN ATLANTIC CITY, 1968.

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THIS NEWSLETTER COMPARES THE ADVANTAGES AND DISADVANTAGES OF SCHOOL RENOVATION AND NEW SCHOOL CONSTRUCTION WITH RESPECT TO EVOLVING EDUCATIONAL NEEDS AND METHODS. THE NEED TO UTILIZE EXISTING STRUCTURES THROUGH RENOVATION AND MODERNIZATION IS EMPHASIZED AND A FORMULA IS PROVIDED FOR COMPARING RENOVATION AND NEW SCHOOL CONSTRUCTION COSTS. PROBLEMS AND CONSIDERATIONS ARE GIVEN FOR MODERNIZATION. EXAMPLES ARE GIVEN OF SUCCESSFUL RENOVATION PROJECTS INCLUDING GYMNASIUMS, AUDITORIUMS, AND CLASSROOMS. NEW TEACHING INNOVATIONS ARE ALSO ILLUSTRATED. (MM)

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
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NEW LIFE for OLD SCHOOLS!

Newsletter 26, March 1968

A PUBLICATION OF THE RESEARCH COUNCIL OF THE GREAT CITIES PROGRAM FOR SCHOOL IMPROVEMENT

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RENOVATE and MODERNIZE

or

ABANDON and BUILD

educational specifications

survey of existing conditions

evaluation and program decisions

feasibility studies

A Summary of an Illustrated Talk Given by WILLIAM L. ENSIGN of McLEOD, FERRARA & ENSIGN, Architects, at the AASA CONVENTION IN ATLANTIC CITY, 1968.

The decision to renovate and upgrade older school facilities rather than build anew is one that is constantly challenging community planners and officials. Obviously, new construction is straight forward and tends not to have the attendant problems of renovating an older structure, especially one that must remain in use during the process. Moreover, a new structure often is better able to accommodate a school program in a tailor-made fashion than the other solution. But, approximately one third of the annual capital expenditure for school construction is spent in additions and alterations. Considering that approximately 20 per cent of the school buildings in this country are in excess of 40 years of age, it would be foolhardy to expect that this amount of construction could be attempted while totally abandoning and replacing the older buildings. The costs would be staggering; consequently, the question of what to do with these buildings and whether or not they can be updated to accommodate superior education and programs are worthy of close scrutiny and cannot, obviously, be the result of a haphazard evaluation.

We must take a close look at these older school buildings, which have become part of our educational heritage, and discuss and examine them in the light of the inherent characteristics, which now make them obsolete.

Experience has shown us that in some instances an older building can be successfully remodeled, and can, at a minimum of the cost of a new structure, accommodate all that its supporters would hope that it would. Conversely, in other instances, it is totally unfeasible to expect that a structure built to satisfy a previous generation's demands would in any sense provide the type of learning spaces and flexibility now germane to the contemporary educational picture. Not only is this true in the sense of comfort conditioning and sophisticated controls, etc., but in the actual educational media which must be superimposed upon older buildings, making demands which they cannot accommodate. The first thing that comes to mind is the amount of movable walls and open spaces now inherent in the team-teaching patterns and nongraded organization currently in use. These innovations are greatly hampered by the lack of open spaces, often impossible to be provided due to the existence of bearing partitions, mechanical equipment, etc.

In the intervening years, building codes have been upgraded, and the old, tired systems that nourished the buildings for years have deteriorated, requiring great investments of money for reconditioning and upgrading to current fire and safety standards. Why, then, is it ever feasible to renovate an older building? And if so, will it at best be a compromise with progressive programming?

In an attempt to provide a mathematical formula for determining the

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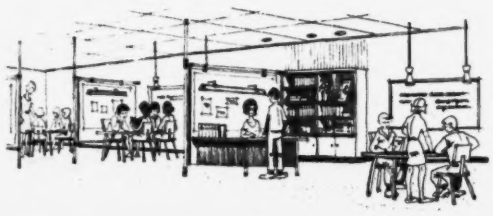


The program requirements for more open planning to accommodate nongraded and team teaching instruction make the traditional "egg crate" plan educationally obsolete.

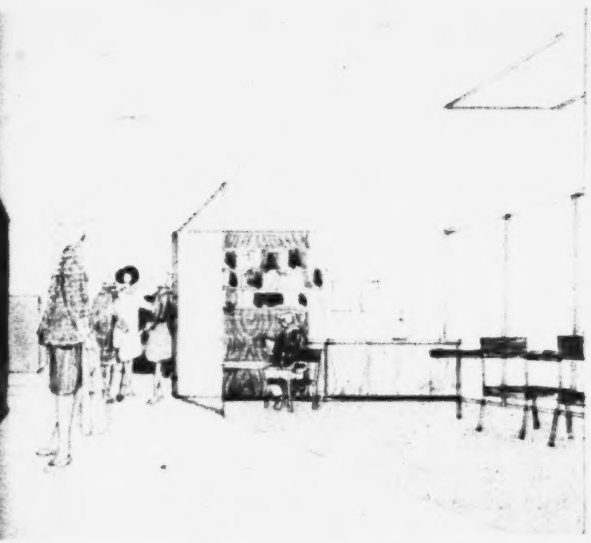
New educational techniques such as team teaching lead to spaces for teacher planning unheard of in previous schools.

Libraries are no longer just places to deposit books, but action-orientated resource centers for the intellectually-curious individual.

NEW CONCEPTS UP-DATE EXISTING STRUCTURES

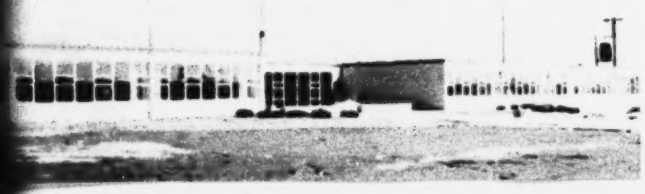
. . . it's important to bring existing facilities up to standards of design in new additions, such as the utilization of spaces off corridors to create a student "commons" area.

It's not too difficult to incorporate teachers' office cubicles in the faculty planning area of an existing school . . .

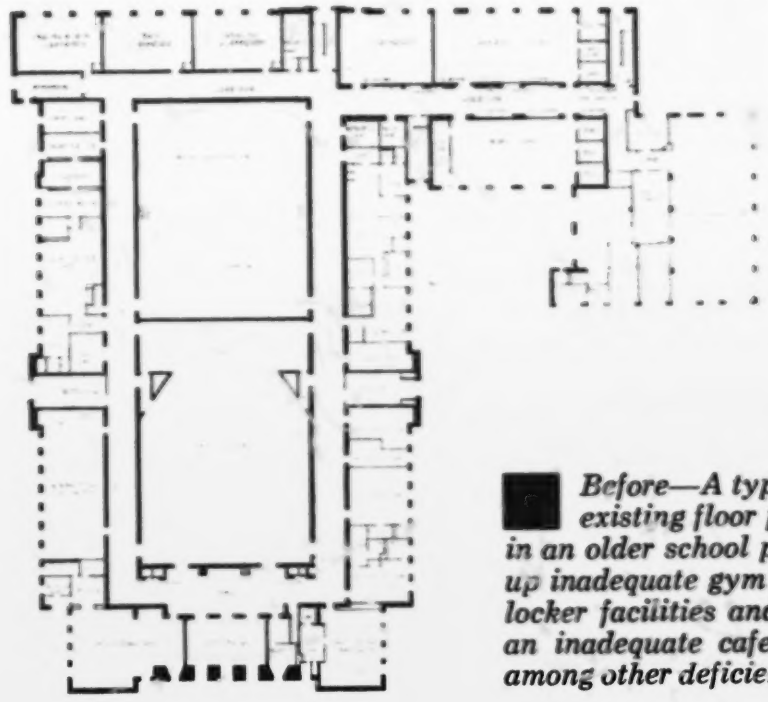


. . . the time of modernization is the time to consider changes such as a new approach to the typical corridor locker arrangement . . .

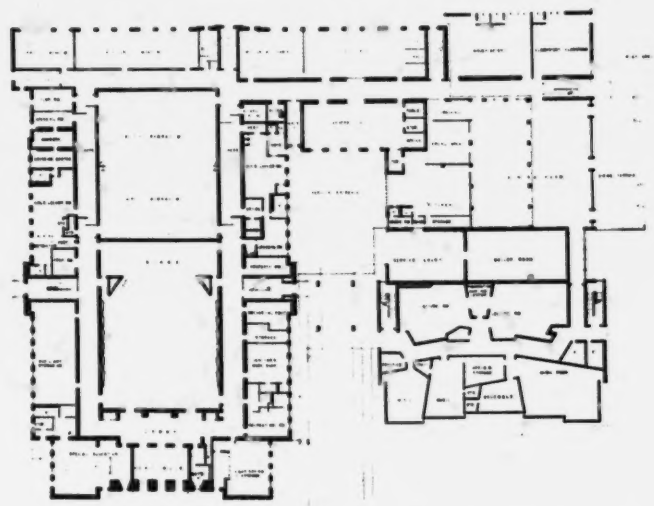
Here's a new school under construction that is educationally obsolete before the grass has been planted.



Additions Can Work Wonders



Before—A typical existing floor plan in an older school points up inadequate gym and locker facilities and an inadequate cafeteria, among other deficiencies.



After—A sensitive addition added additional auxiliary gym spaces. Unnecessary corridors are reclaimed adding much-needed locker space. Note the new cafeteria layout and the relationship of new specialized teaching areas to the old building.

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feasibility of a renewal project, Dr. Basil Castaldi developed the following formula based on the annual rate of depreciation:

$$\text{IF} \quad \frac{Ce + Ch + Cs}{(Lm)\quad(La)} < \frac{R}{Lr}$$

then modernization is feasible

Ce=Cost for education improvements

Ch=Cost for improvements in healthfulness

Cs=Cost for safety improvements

Lm=Estimated useful life of modernized school

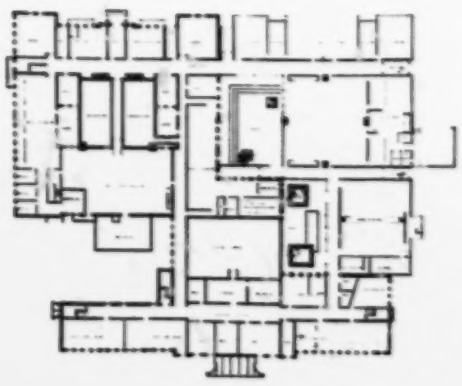
La=Estimated index of educational adequacy (0-1)

R=Replacement cost of new school

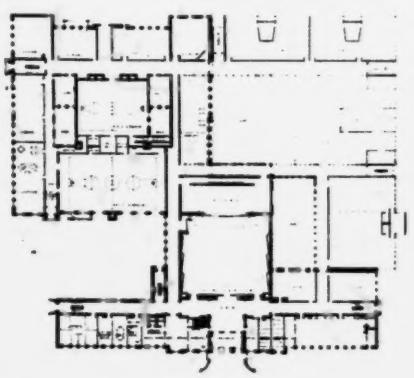
Lr=Estimated life of replacement school

A less complicated rule of thumb suggests that if a building project requires 50 per cent of its cost to upgrading the existing facilities rather than providing for new spaces, then the project is not feasible. These formulas, of course, are subject to interpretation and must take into account a great number of

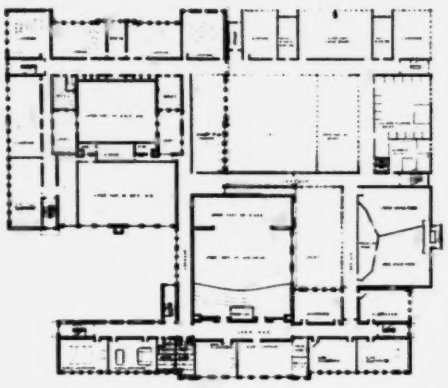
● *Before—Here's a typical old school floor plan with egg crate classrooms, poor circulation pattern, and so on.*



● *After—The incorporation of large areas in the new addition makes modernization easier, converting existing spaces into those areas requiring less physical remodeling.*

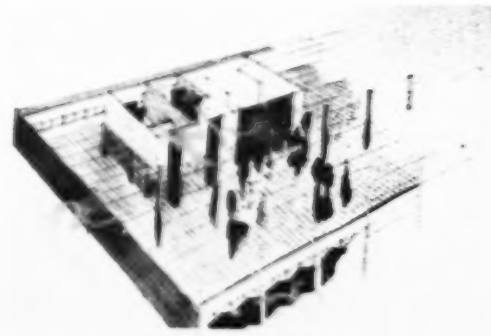


● *After—The circulation pattern is improved by a link at back of the stage. The existing areas are remodeled to provide varying sizes of instructional spaces. Note the student study commons adjacent to the new courtyard, incorporated to relieve the old narrow circulation corridor.*

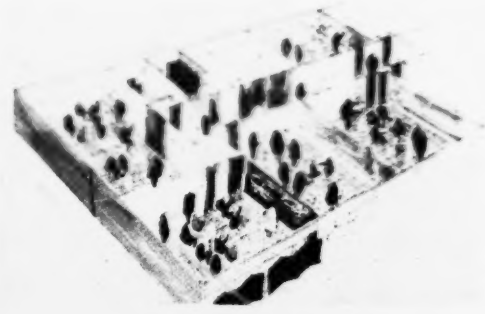


● *After—New spaces to house changing educational concepts continues on the second floor of the building. The modernization and addition truly gives new life to this old school.*

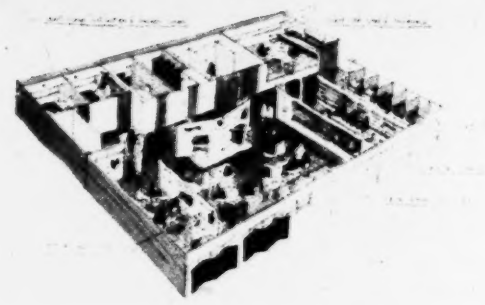
A LESSON IN SPACE USE



Here's a typical school arrangement: double-loaded corridor, "egg crate" classrooms . . .



. . . the building's modular structural system with non-bearing partitions permits total flexibility of space with the exception of permanent services areas such as stairs, toilet rooms . . .



. . . and here's the same space remodeled to accommodate changing educational needs.

Panel members appearing at the session with Mr. Ensign included T. C. Bird, Superintendent of Schools, Boise, Idaho, chairman; Charles D. McKenna, Assistant Superintendent, Ladue City (Missouri) School District; Michael L. Radoslovich, Associate, Office of Max O. Urbahn, architect; and Ben E. Graves, The Great Cities Research Council.

other considerations such as community feeling, land acquisition costs, location of site, population densities, etc.

To be systematic, it is advisable to begin at the beginning. A firm commitment to educational policy and a defined set of educational specifications should be prepared which does not take into account any particular existing space—merely defines the program as the administrators and educators would ideally like to see it. It is at this point that evaluation can begin to determine whether a new school is absolutely necessary or whether the old one can be upgraded. Any compromise at this point tends to make the endeavor fall short of the desired goal.

From the educational program, the development of space relationship will ensue. And, from this vantage point, an Architect can make value judgments concerning the development or renovation of the spaces at hand.

Frequently it is possible to combine two solutions, such as renovat-

continued next page

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ing the better areas of an older structure and adding to it in such a fashion that the spaces which demand the greater flexibility, will be contained in the newer section of the total unit. Closer examination will bring out other failings of the building such as safety hazards, obsolete plumbing, outdated mechanical equipment, insufficient lighting, sound control, circulation, etc.

Of primary importance is the building's esthetics. Can the building be remodeled in such a fashion to provide the necessary spaces within and still present a harmonious and appropriate setting for this school itself, and how well will it harmonize with the neighborhood?

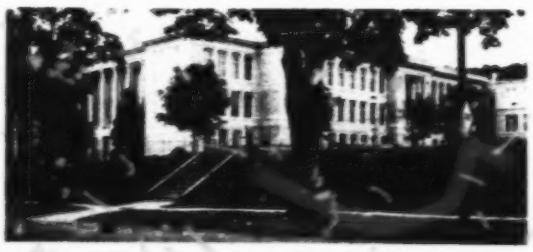
Is play space provided for? If not, can it be acquired either adjacent to the building or in proximity to it? If it cannot be provided at all, how does this effect the educational program?

Once having determined that the building is salvagable, it is usually surprising to see how the spaces within can be transformed through the use of suspended ceiling, carpeting, two-story open areas, and general "cosmetics".

Several photographs and illustrations on these pages indicate the results of previous decisions, which have been made by school districts, when confronted with this problem. In almost every instance, once the decision to proceed along these lines has been made, the result is beneficial for all concerned, and is accomplished at a lower per student cost than a new building.

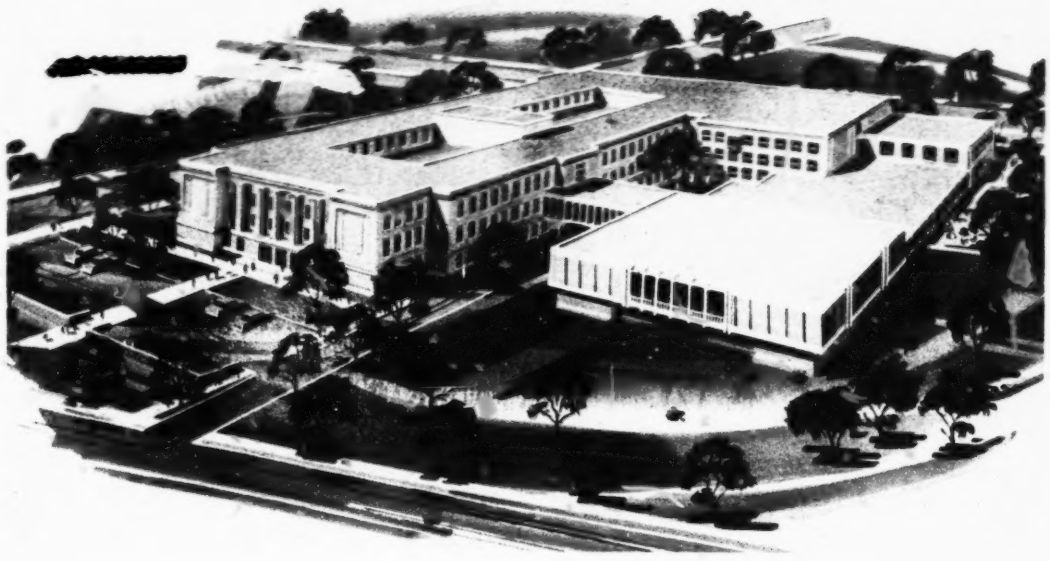
However much the Architect and the Educational Consultants evaluate the program and its solutions, the final decision remains with the Administrators. They are, after all, in possession of many more determining factors, such as depreciation, taxes, revenue, condemnation problems, bond issue results, transportation, and student surveys. It is, accordingly, to this group that the ultimate responsibility falls, no matter how well advised they are by their "experts."

The Exterior Is Important, Too

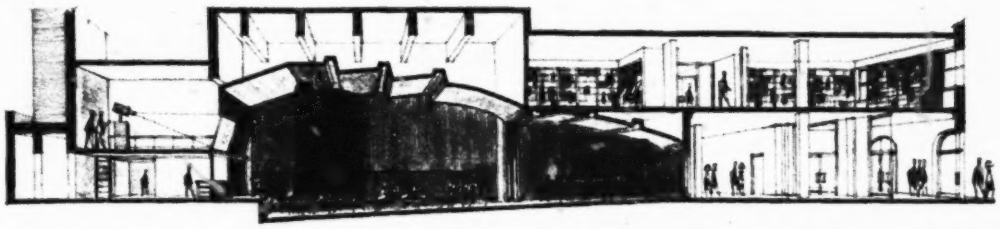


The architectural character of additions should be in harmony with the existing environment . . .

. . . even though construction techniques vary.



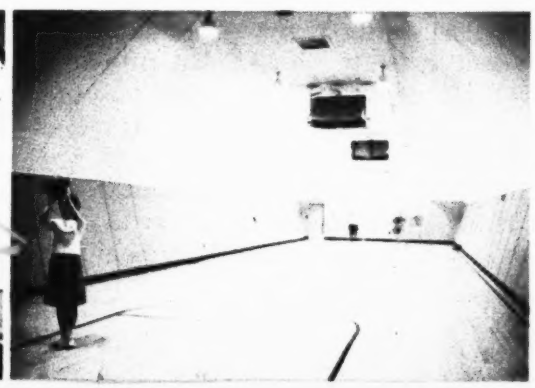
Space Is Where You Find It



In this typical auditorium with its main floor and balcony level, the lower auditorium floor is changed to house two AV instructional areas in the rear and one in the front. The balcony level is converted into an addition to the library incorporating the old center corridor.

Even Barns Can Find New Life

An old barn in a rural area finds new life as a temporary physical education building. A survey showed this could be done with a minimum of expenditure making it economically feasible. Later, building becomes student center.



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BEN E. GRAVES, *Project Director*

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